

PATENT SPECIFICATION

NO DRAWINGS

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COMPLETE SPECIFICATION

'Improvements in and relating to Fastening Screws and Nails

I, EUGEN DUMONT, of 9, Schone Aussicht, Frankfurt/Main, Germany, a German citizen, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention is concerned with fastening screws or nails having a reduced penetration resistance.

Thus, according to the present invention, there is provided a fastening screw or nail having a reduced penetration resistance, wherein the shank of the nail or the thread of the screw is provided with a coated film of a lubricating agent comprising a fluorocarbon polymer, polyamide, silicone resin or polyolefine.

It is to be understood that the screws and nails are preferably first cleaned and degreased but that no other treatment is necessary before application of the coated film.

When screws film coated in this way are driven into wood, plastics or building stones, a much weaker driving force has to be exerted than in the case of untreated screws. It is, therefore, possible to drive screws made of light metal and prepared according to the present invention, into wood or into hard plastics, without it being in any way necessary carefully to make a preliminary hole, as is necessary in the case of untreated screws.

Untreated screws frequently caused a splitting of the wood or of the plastics material but by using film coated screws according to the present invention, it is no longer even necessary to carry out the customary lubrication of the screws with soap, which takes time. The corrosion of certain materials which are attacked by soap in a disadvantageous manner is also avoided.

In particular, the present invention makes it possible to widen the field of use of screws made of light metals, which combine simultaneously the advantage of not rusting, of being light in weight and of being cheap. Hitherto, screws made of these metals possessed the disadvantages of light metals; they became elongated and broke by the effect of torsion, they bent by the effect of the pressure required to drive them or they broke by the action of the screwdriver in the head slot.

These disadvantages are completely absent when the screw threads and nail shanks are film coated with a fluorocarbon polymer, polyolefine, polyamide or silicone resin.

The torque required for driving a film coated screw is consequently considerably reduced and it is no longer necessary, during driving, to exert an extra pressure upon the head of the screw during the first turn. This particularly facilitates working in comparatively inaccessible places.

The present invention is also applicable to nails and the coated screws and nails are particularly easy to handle when they have to be made to penetrate into materials liable to split easily. The film coated screws and nails do not readily splinter wood when they are driven into the wood by screwing or hammering.

Examples of film coating substances which have been found to be particularly advantageous are the polytetrafluoroethylene, polyfluoropropylenes, polychlorotrifluoroethylenes and mixtures thereof. It is also possible to use advantageously polyolefins, such as polyethylene or polypropylene as well as polyamides.

The following Examples are given for the purpose of illustrating the present invention:—

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EXAMPLE 1

- Wood screws or nails made of aluminium, iron or brass are first thoroughly degreased, then coated with a polytetrafluoroethylene lacquer and thereafter heated for a short time to a temperature between 330 and 400°C., in nitrogen and by induction so far as possible. The screws and nails thus obtained then require only one-sixth or one-quarter of the force required for driving them into wood, as compared with untreated screws or nails.

EXAMPLE 2

- Degreased screws are either immersed in a solution of polyethylenes in tetrachloroethylene or are sprayed with this solution and then, after drying, are heated for a short time to 160°C. Screws treated in this way require, in order to penetrate into wood, leather or plastics, a penetrating force which is less than that of untreated screws. It is advantageous, in this case, to use agents which improve the adhesion, for example, a trace of stearic acid.

EXAMPLE 3

The shanks of iron nails are film coated by a fluidised bed method, with polypropylene, or by lacquering with silicone resin and thereafter baking. These nails penetrate much more easily into wood than nails which have not been treated.

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WHAT I CLAIM IS:—

1. A fastening screw or nail having a reduced penetration resistance, wherein the shank of the nail or the thread of the screw is provided with a coated film of a lubricating agent comprising a fluorocarbon polymer, polyamide, polyolefine or silicone resin.
2. A fastening screw or nail according to claim 1, substantially as hereinbefore described.

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